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**From:** Elleman, Robert  
**Sent:** Monday, September 22, 2014 11:53 AM  
**To:** Kotchenruther, Robert; Meyer, Linda; Hedgpeth, Zach; Valdez, Heather  
**Cc:** Hall, Chris; Hastings, Janis  
**Subject:** RE: FMC - phosphine monitoring Re: ambient air monitoring

You could try Brian Gullett at ORD. I don't think he measures phosphine but he measures all sorts of other interesting and crazy things (exploding munitions, for example) and is always worth pinging for opinions. I bet he could point you in the right direction.

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**From:** Kotchenruther, Robert  
**Sent:** Monday, September 22, 2014 10:46 AM  
**To:** Meyer, Linda; Hedgpeth, Zach; Valdez, Heather  
**Cc:** Hall, Chris; Elleman, Robert; Hastings, Janis  
**Subject:** RE: FMC - phosphine monitoring Re: ambient air monitoring

Hi Linda

The name that comes to mind in RTP that you could call is Tim Hanley (919-541-4417), he is one of the monitoring leads there. While he may not have a good answer for you, he is more likely to know what's going on in ORD and who the best person to call there is.

Chris, Rob, others ... any better ideas?

Cheers  
Bob

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Robert Kotchenruther, Ph.D.  
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**From:** Meyer, Linda  
**Sent:** Monday, September 22, 2014 10:10 AM  
**To:** Kotchenruther, Robert; Hedgpeth, Zach; Valdez, Heather  
**Cc:** Hall, Chris; Elleman, Robert; Hastings, Janis  
**Subject:** FMC - phosphine monitoring Re: ambient air monitoring

Hi Bob - I am actually looking for either a new application (phosphine) for an existing technology or where the science is on detection of this type of constituent (including an explanation of the limitations of current instruments). The site I am working (FMC-Pocetallo) on has waste left in place with elemental phosphorus capped in place. It is generating phosphine. The Tribes have asked that we monitor the phosphine concentration. At one point when the elemental phosphorus ponds were operating with water over the solids we had a FTIR system. Now that the ponds are covered some monitoring is done with a Draeger PAC 7000 for low range, and X-AM 5000 for high range. This measurement is generally done monthly. The Tribes have asked for continuous monitoring of phosphine. Do you (or anyone one cc'd on this) know anyone in HQs air or ORD that might be able to help? Thanks for your assistance.

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**From:** Kotchenruther, Robert  
**Sent:** Wednesday, July 23, 2014 7:35 AM  
**To:** Hedgpeth, Zach; Meyer, Linda; Valdez, Heather  
**Cc:** Hall, Chris; Elleman, Robert  
**Subject:** RE: ambient air monitoring

Hi Linda

Phosphine is not a typical pollutant we have experience monitoring for, but if your question is related to what monitoring equipment should be used then it will likely depend on what detection limits you're looking for. I found several methods on the web, one from OSHA (OSHA\_1003.pdf) and one from CA Air Resources Board (air\_rpt\_phosphine.pdf), but to determine the right equipment for your project you should likely involve OEA's QA group (and maybe the lab) in the development of a QAPP.

If you already have the sampling instrumentation identified and your questions are more related to appropriate monitor placement for the project goals, then either Chris Hall (air monitoring QA specialist) or Rob Elleman (regional meteorologist) is the best person to engage.

Hope this is helpful.

Cheers  
Bob

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**From:** Hedgpeth, Zach  
**Sent:** Wednesday, July 23, 2014 5:54 AM  
**To:** Meyer, Linda; Valdez, Heather  
**Cc:** Hall, Chris; Elleman, Robert; Kotchenruther, Robert  
**Subject:** RE: ambient air monitoring

Hi Linda,

If I had questions about ambient air monitoring, I'd track down one of the great OEA technical air staff cc'd on this message. :)

Not sure which of the guys would best be able to help, so I'm cc'ing them all...

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**From:** Meyer, Linda  
**Sent:** Tuesday, July 22, 2014 5:04 PM  
**To:** Valdez, Heather; Hedgpeth, Zach  
**Subject:** ambient air monitoring

Heather/Zach – do you know or do you know who I can talk to about ambient air monitoring for phosphine?

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